Bay Delta Conservation Plan (BDCP)
CWA 404 Issues Paper
December 5, 2011

BACKGROUND: The San Francisco Bay/Sacramento-San Joaquin River Delta (Bay Delta Estuary) provides drinking water to 25 million Californians, sustains about $400 billion of annual economic activity, including agriculture, recreation, and commercial fishing, and is home to 55 species of fish and 750 species of plants and wildlife.

The upper estuary is composed of the Sacramento-San Joaquin River Delta (Delta), which is the hub of the nation's largest water delivery system, the State Water Project (SWP) and the federal Central Valley Project (CVP). The SWP and CVP divert water from the southern Delta and deliver it to urban, industrial, and agricultural users. Coordinated water diversions through SWP and CVP are currently operating under Endangered Species Act (ESA) jeopardy opinions from USFWS and NMFS.[1]

The Bay Delta Estuary is in crisis. The ecosystem has reached a point of collapse after decades of steep and steady decline. The long-term decline of native fisheries in the Bay Delta Estuary over the past several decades is dramatic and well-documented.[2] After 2001, many open water fish species, including two species that were previously the most abundant in the Estuary, suffered nearly simultaneous, sharp population declines. Impacts from water diversions, climate change, sea-level rise, drought cycles, seismic risks, and other stressors such as pesticides, nutrients, pollutant discharges, and invasive species, contribute to plummeting fish populations, aquatic ecosystem instability, water supply shortages and vulnerability.

BAY DELTA CONSERVATION PLAN (BDCP) is a habitat conservation plan under the *Endangered Species Act* intended to address the most critical water issues facing California by constructing new SWP and CVP points of diversion, water delivery infrastructure and providing large-scale (up to 80,000 acres) aquatic habitat restoration. The BDCP ESA permit application (for the take of endangered and threatened species) aims to identify water diversion infrastructure, operations, flow through the estuary, and habitat restoration actions that avoid *jeopardizing the continued existence* and *contribute to the recovery* of endangered and sensitive species and their habitats, improve reliability and flexibility in water supply, and ensure the vitality of local communities and agriculture.

NEPA: The BDCP Environmental Impact Statement (EIS) is intended to support a number of regulatory decisions, including, but not limited to: (1) ESA permits from NMFS and FWS for the operation of SWP and CVP for the next 50 years; (2) change in the SWP and CVP point of diversion permit from the State Water Resources Control Board (State Water Board); (3) Clean Water Act (CWA) Section 401 certification for the Delta Conveyance Project from the State Water Board; (4) CWA Section 404 permit, Rivers and Harbors Act (RHA) Section 10 and Section 408 permits for the Delta Conveyance Project from USACE.[3] There are three federal lead agencies, USFWS, NMFS, and BOR ("lead agencies"); EPA and US Army Corps of Engineers (USACE) are federal cooperating agencies on the BDCP EIS. EPA will review and rate the BDCP EIS and provide CWA Section 404 oversight of USACE permit decisions.

The lead agencies have chosen to produce an EIS that contains ***programmatic*** information for the ecosystem restoration elements and ***project level*** information for the "Delta Conveyance Project" (relocation of pumps to the north Delta, new canal or pipeline to divert the water, operations plan for water diversion). The proposed Delta Conveyance Project includes construction and operation of a maximum 15,000 cfs capacity canal or pipeline and up to 5 intake structures in the Sacramento River or on the banks and levees.

PROGRESS: In September 2011, EPA, the Corps, and DWR agreed on methods for a preliminary determination of CWA jurisdictional water ways and conditional assessment of the aquatic resources within the project area.[4] EPA, Corps, DWR and other lead federal agencies are negotiating a NEPA-CWA-RHA MOU to guide and streamline the environmental review processes by integrating reviews for ESA, CWA, and RHA using the BDCP EIS. The BDCP EIS is intended to support ESA and CWA permit decisions for the Delta Conveyance Project including (1) CWA Section 404 permit decisions to discharge dredged or fill material into waters of the U.S., (2) RHA Section 10 permit decisions to authorize work in, over, or under navigable waters of the U.S., including the diversion of water from navigable waters of the U.S., and (3) Section 408 permit decisions for alterations/modifications to existing USACE projects.

CWA 404 AND 401 ANALYSIS: Region 9 is working with USACE, State Water Board, and DWR on the CWA Section 404 and 401 process for the Delta Conveyance Project. Issues include:

1. **Alternatives Analysis & LEDPA Identification:** The Delta Conveyance Project LEDPA analysis should include an estimate of impact to waters of the US from the proposed discharge of fill material (usually in acres of fill to waters). The LEDPA analysis should also include estimates of the impact of operations (water diversion) on water quality and designated uses. In NEPA scoping comments,[5] EPA recommended evaluating impacts to water quality that result from ecosystem enhancement and the Delta Conveyance Project, including impacts to salinity, boron, total organic carbon, dissolved oxygen, mercury, selenium, and toxicity of unknown origin. EPA also suggested that broad water quality indicators may be insufficient to capture particular, localized water quality issues of interest. Ammonia and dissolved oxygen, for example, are site specific water quality problems in the Delta that should also be evaluated in the EIS and included in CWA 404 LEDPA identification method.

   The impact of the Delta Conveyance Project on designated uses, such as estuarine habitat and migratory corridors (e.g., for salmon), should also be estimated and included in the LEDPA analysis and identification process. The loss of estuarine habitat (area of low salinity zone) is a significant contributor to recent open water fish population losses. During the last decade, SWP and CVP operations have moved the low salinity zone, measured by the location of "X2" (the distance from the Golden Gate Bridge to the place in the estuary where salinity is 2 parts per thousand), into the narrow channels of the eastern Delta, substantially reducing habitat for open water fishes during the fall months. USACE is estimating how the size of the low salinity zone changes in response to the Sacramento Deep Water Ship Channel dredging project for NEPA disclosure. This type of analysis is appropriate for the Delta Conveyance Project LEDPA identification because it provides a metric to estimate the amount of low salinity zone habitat under different operations alternatives. Information generated on water quality should also assist in identifying whether or not barriers to salmon migration are increased from project-generated changes to temperature or low dissolved oxygen.

2. **Coordinating CWA Programs:** SWRCB is responsible for issuing the 401 water quality certification. They are also planning to revise water quality standards that protect estuarine habitat including the Delta Outflow Criteria which are based on "X2" measurements that identify the location of the low salinity zone. EPA Region 9 will be recommending year-round Delta Outflow Criteria that are protective of aquatic resource designated uses in all seasons. Ideally, the BDCP federal lead agencies would coordinate with EPA, USACE, and SWRCB to ensure that the preferred Delta Conveyance Project identified in the BDCP EIS is consistent with CWA Section 404 LEDPA requirements and is informed by SWRCB plans to adjust the Delta Outflow Criteria. The current sequential approach may result in USFWS and NMFS issuing ESA 50-year take permits for the Delta Conveyance Project that establish SWP and CVP operations that will be adjusted again when the SWRCB updates Delta Outflow Criteria.

3. **Potential for CWA 404 permit denial:** Certain operations alternatives for the Delta Conveyance Project may cause or contribute to violations of state water quality standards and significant degradation of aquatic resources; two specified prohibitions to granting a permit under EPA CWA Section 404 regulations.[6] All waterways within the Delta are on the CWA Section 303(d) List of Impaired Water Bodies for salinity, toxicity, pesticides, metals, pathogens, nutrients, low dissolved oxygen, and invasive species. The two primary concerns are: 1) SWP and CVP operations (magnitude, timing, and frequency of diversions) will cause significantly adverse effects to the salinity gradient and the amount of estuarine habitat for native and desired pelagic fishes contributing to declining fish populations that are now at historic lows; and 2) Diverting Sacramento River water in the north Delta, as planned under the BDCP, eliminates a dilution source and reduces circulation in downstream of the new intakes, potentially concentrating pollutants in the south Delta, and contributing to violations of state-adopted water quality objectives. SWP and CVP operations currently pull cleaner Sacramento River water into the south Delta where salinity, selenium, low dissolved oxygen, pesticides and nutrients are substantial water quality problems.

[1] Delta smelt, Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, North American green sturgeon, and Southern Resident killer whales

[2] JOHN E. SKINNER, AN HISTORICAL REVIEW OF THE FISH AND WILDLIFE RESOURCES OF THE SAN FRANCISCO BAY AREA 226 (Cal. Dept. of Fish and Game, Water Projects Branch Rep. No. 1, 1962), *available at* http://www.estuaryarchive.org/archive/skinner_1962/; W.A. Bennett & Peter Moyle, *Where Have All the Fishes Gone? Interactive Factors Producing Fish Declines in the Sacramento-San Joaquin Estuary, in* SAN FRANCISCO BAY: THE ECOSYSTEM 519,

519-42 (J.T. Hollibaugh ed., 1996); PETER MOYLE ET AL., 2010 CHANGING ECOSYSTEMS: A BRIEF ECOLOGICAL HISTORY OF THE DELTA (Feb. 2010), *available at* http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/intro_delta_history_14feb2010.pdf

[3] http://baydeltaconservationplan.com/EnvironmentalReviewProcess/AboutTheEIR.aspx

[4] September 2, 2011 letter from Karen Schwinn at EPA to Rich Sanchez at DWR.

[5] May 19,2009 letter from EPA to USFWS regarding Scoping Comments on BDCP NOI *available at* http://www.epa.gov/region9/water/watershed/sfbay-delta/pdf/EPA_Comments_BDCP_3rdNO_051409.pdf

[6] 40 CFR 230.10(b)(1) and (c)